

# BCL-1 Remote Manual Clock

BCL-1 remote control clock to achieve the following functions: power-down memory, precisely when the school, the whole point of time, 5-way alarm clock, error correction, can be shut closing the digital display.

## I. Kit Overview

Kit Model: BCL-1  
Package Name: Four remote control clock  
PCB size: Ø57mm 1.0mm thick  
Operating voltage: 5V (USB powered)  
Light shell size: Ø60mm

## II. Rationale

The system consists of the smallest single-chip systems, infrared receiver circuit, display circuit, buzzer circuit, clock chip and power parts.

1. Smallest single-chip system: Power-on reset circuit includes U1 (STC11F04E), C1, R5 composition, C2, C3, Y1 constitutes a clock circuit.
2. The infrared receiver circuit: U3 is responsible for receiving signals from the remote transmitter, the latter is amplified by a plastic pin output, and transmitted to the microcontroller processing.
3. The display circuit: U4 (74HC138D) 3-8 line decoder, Q1-Q4, R7-R14 and common anode digital tube.
4. Buzzer circuit: R6, Q5 and LS1 constitute, key tone clock chime sounds, the alarm sounds by the microcontroller P3.1. Port output, the Q5 driver LS1 sound.
5. The clock chip: U2 (DS1302), Y2, C5, C6 and BT1 composition.
6. Power section: J1 extension cords, C4 filtering.

## III. Instructions

### A. key General function:

"Wind Class" button main menu; the "off" and "shook his head" for the increase and decrease buttons; "Speed" and "fixed

When the "left and right option button is selected in the normal travel time interface, press the" wind class "to enter the sub-menu to adjust the time.

1. Adjust Time submenu: LED is blinking digit is the current selected position, adjust the hour and minute by subtraction and left and right keys, and then Press the "wind class" to save and exit, enter alarm settings submenu.

2. The alarm setting submenu: first 5-way switch to select the alarm total, the first display C, after two flashes ON (open) Or OF (off), switches from plus or minus keys. If selected OF (off), then press the "wind class" directly into the Error Correction submenu.

If you choose ON (open), then press the "wind class" to enter the alarm setting for each channel to channel 1 alarm for example. Display C1, after two flashes ON (on) or OF (off), on and off the set as above, if the election OF (off), then press the "wind class" directly into the 2-way downtown Bell ON (on) or OF (off) option; if yes ON (open), then press the "wind class" to enter the hours and minutes settings, set Methods and adjust the time agreed, after setting, press the "wind" entry channel 2 alarm settings, alarm settings to complete the fifth path Then press the "Wind" entry error correction submenu.

3. Error Correction submenu: the first shows N, after two flashes ON (open amended) or OF (closed amended), the plus or minus key

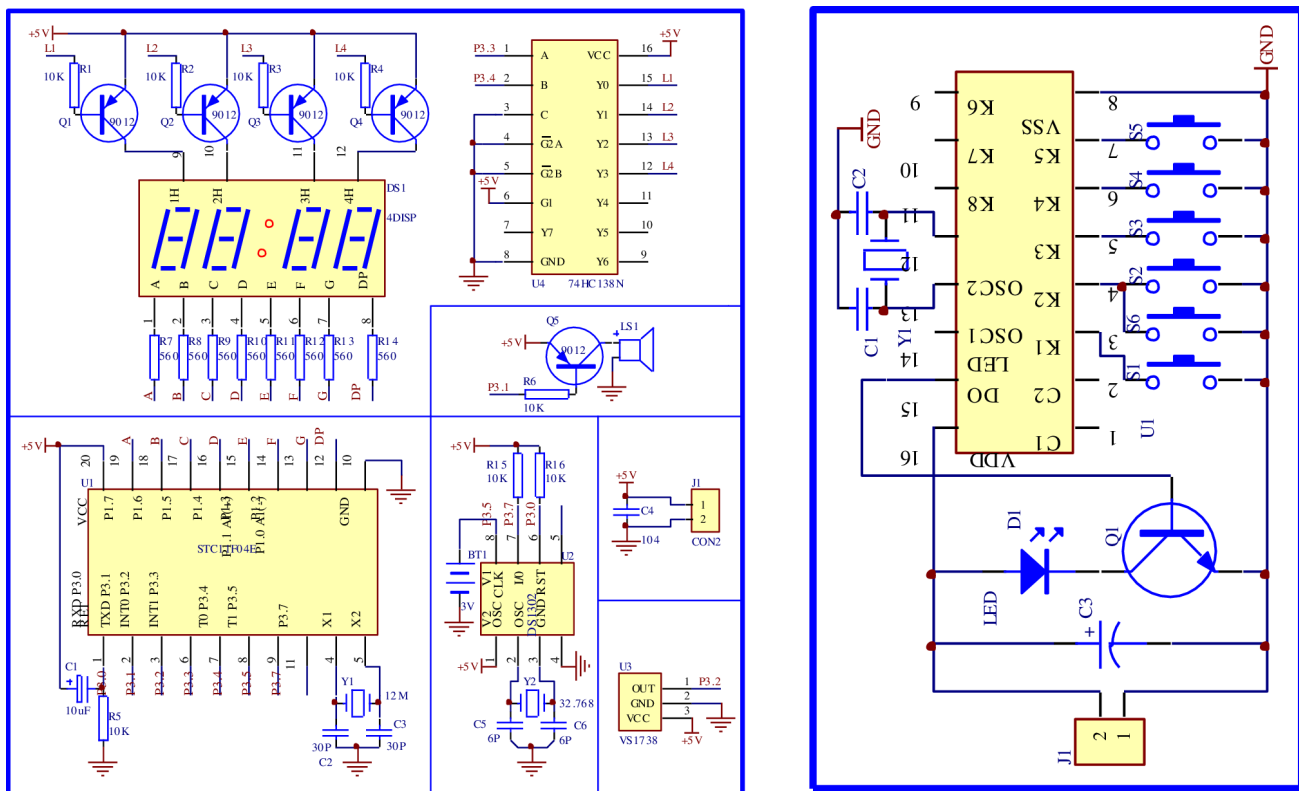
Switch, if you choose OF (closed amended), and then "wind class" is returned to the normal travel time interface; If you select ON (open amended), Press the "Wind" entry correction parameter setting interface, after two flashing display 01, on behalf of one day (the number of days in the range 1-999) Day by between plus and minus keys to select), and then press the number of days selected "wind class" Save Settings interface to enter the number of seconds after the two displays 00 Flashing, on behalf of 0 seconds (number of seconds in the range between -50 seconds to 50 seconds plus or minus key to select by, have a negative sign indicates X days by Y Second, there is no negative sign indicates X days plus Y seconds), press the "wind class" to return to normal travel time interface.

### B. Shortcuts key operating functions:

1. In normal travel time by interface under the "off" to turn off or turn on the digital display.
2. Under normal travel time interface press "shook his head" to go away when the screen is switched every minute and when the interface between the division.
3. Press the normal travel time interface under "Speed" to select the entire 5-way alarm on or off (display C ON or OF), set up after the Press the "Wind" entry chime on or off to select (display H ON or OF), after selection press "wind class" to return to normal walking When the interface.
4. In the minutes and seconds to go when the next screen press the "time" to show SEC, after the second digits flash, a few seconds after a little bit and the second sub-bit flash together, at this precise time control of another press the "Timer" to zero the seconds, minutes and seconds to go when you finally return to the interface, you can check

Seconds if accurate calibration.

### IV. Circuit Schematics



## V. Components List

### 1. Remote control

Name	Specifications	Designator	Quantity	Name	Specifications	Designator	Quantity
IC	BA5104	U1	1	Battery	CR2025		1
Transistor	S8050	Q1	1	Battery case	Plus/Minus	J1	2
Cap	100P	C1-C2	2	Screw	1.4 * 3		5
Cap	22uF	C3	1	PCB	76 * 30.5mm		1
Crystal	455E	Y1	1	Key Foil	83 ** 38		1
Infrared LED	Ø3	D1	1	Case	86 * 40 * 6mm		1

### 2. Clock

Name	Specifications	Designator	Quantity	Name	Specifications	Designator	Quantity
Resistor	560R (0805)	R7-R14	8	IC	74HC138D	U4	1
Resistor	10K (0805)	R15-R16	2	RTC chip	DS1302	U2	1
Resistor	10K	R1-R6	6	SCM	STC11F04E	U1	1
Ceramic	6P	C5 C6	2	7 Segment LED	0.56 inch four red	DS1	1
Ceramic	30P	C2-C3	2	Buzzer	5V active	LS1	1
Ceramic	104	C4	1	Battery Holder	CR2025 case	BT1	1
Electrolytic	10uF / 25V	C1	1	Battery	CR2025	BT1	1
Transistor	S9012	Q1-Q5	5	Double Sided PCB	FR4 1.0mm		1
Crystal	32.768K	Y2	1	Power Cable	USB		1
Crystal	12MHz	Y1	1	Lamp housing	Ø60		1
Infrared receiver	VS1738	U3	1	Lamp-shade	Ø60		1